ACC.11
60th Annual Scientific Session & Expo

E677
JACC April 5, 2011
Volume 57, Issue 14

IMAGING AND DIAGNOSTIC TESTING

WHOLE-HEART MAGNETIC RESONANCE CORONARY ARTERY IMAGING: FIRST EXPERIENCE WITH A NEW NAVIGATOR GATED PULSE SEQUENCE TO EVALUATE CORONARY ARTERY STENOSES

ACC Poster Contributions
Ernest N. Morial Convention Center, Hall F
Sunday, April 03, 2011, 10:00 a.m.-11:15 a.m.

Session Title: MRI: Diagnosis and Prognosis
Abstract Category: 38. MRI
Session-Poster Board Number: 1026-203

Authors: *Günter Pilz, Tobias Heer, Stephanie Reiter, Erik Penner, Berthold Hoefling, Clinic Agatharied, University of Munich, Hausham, Germany, GEHealthcare, Solingen, Germany*

Background: Magnetic resonance coronary artery imaging (MRCA) is experimental. We evaluated a new navigator gated pulse sequence for whole-heart MRCA.

Methods: We studied patients (pts) who underwent MRCA and coronary angiography (CA) in May and June 2010. Exclusion criteria were CABG, arrhythmia, and segments containing stents. We analyzed vessels suitable for revascularization (> 2mm in CA) in relevant segments. Stenoses >50% (CA) were considered significant. Pts were examined in a Signa HDxt 1.5 T scanner with EchoSpeed gradients and an 8-element phased array cardiac coil (GE Healthcare, Milwaukee, WI). For MRCA, a whole heart 3D navigator gated multislab steady state free precession free breathing sequence was used.

Results: 30 pts fulfilled the inclusion criteria. 5 pts with irregular breathing (huge variability in breathing amplitude) were excluded from analysis, yielding a diagnostic MRCA image quality in 25 pts (83%). Assessability in these pts was as follows: left main, proximal LAD, LCX and RCA: 100%; medial LAD and RCA: 96%, LCX: 83%; 1st diagonal: 57%; marginal branches: 50%. In assessable segments, diagnostic accuracy compared to CA was: left main 100%; proximal LAD 95%, LCX 92%, RCA: 91%; medial LAD and RCA: 91%, LCX: 95%.

Conclusions: Evaluation of relevant coronary segments with non-contrast-enhanced whole-heart MRCA is feasible in pts with regular cardiac rhythm and normal breathing pattern. Assessability and diagnostic accuracy is high, except for marginal and diagonal branches.